

REMARKS/ARGUMENTS

This Response is intended to be a complete response to the Office action of March 19, 2004 and the case is believed to be in condition for allowance. Accordingly, reconsideration is respectfully requested.

Claims 2-26 and 28-35 are pending in the application. Claims 14-17, 21-26, 28, 29 and 31-35 stand allowed. Claims 2-13, 18-20 and 30 were rejected in the Office action. Claims 8, 9, 12, 13, 20 and 30 are amended herein. Claims 10, 11, 18 and 19 are cancelled without prejudice.

Claims 8, 10, 12, 13, 18 and 19 were rejected under 35 USC 103(a) as unpatentable over Gardener et al (U.S. Patent Number 5,365,229) in view of Isaksson et.al. (U.S. Patent No. 6,493,395). Of these, claims 8, 12 and 13 are amended; claims 10, 18 and 19 are cancelled without prejudice. To the extent that the Examiner may view these rejections as applicable to the claims presented herein, Applicants respectfully traverse.

Applicants note that the power level control circuitry in Gardner et al. encodes and modulates the scrambled data output from the transmitter (see Fig 11 and 10). Gardner et al. provides for using an adaptive signal equalizer to continuously correct for cable distortion in the borehole (col. 8, lines 30-35). This equalizer works to make small adjustments after processing of each received data symbol to minimize the

difference between the equalizer's output and the detected estimate of the original data (col. 5, lines 20-34). The output is then filtered, passes through the cable driver and cable coupling circuits. Gardner et al. teach that demands on the equalizer to accurately correct for this distortion are severe in the hostile environment presented by downhole conditions (col 4, lines 50-56).

In contrast, the cable driver of the present invention has power level control circuitry to control the *transmission* power (see page 9 line 6 through page 10, line 4). Thus, the power level control circuitry of Gardner et al. differs from that in the present invention. Furthermore, Isaksson et al. however teaches a logic used at the *receiver* end (col. 8, line 27) in a DMT system modem. Isaksson et al. does not suggest the use of this receiver end logic in a downhole environment. Gardner et al. does not suggest the need for logic to control transmission power but rather limits discussion to methods to correct for the distortion caused by the cable conditions. So while the present invention controls the transmission power to optimize the total transmission power, Gardner et al. teaches correcting data to account for cable distortion, in hope of optimally approximating the original transmitted signal (col. 5, line 25-30). Thus to combine the receiver logic of Isaksson et al. with the correction methods of control circuitry to correct transmitted signals of Gardner et al. would not achieve the present invention.

Claims 2-7, 9, 11, 20 and 30 were rejected under 35 USC 103(a) as unpatentable over Gardener et al (U.S. Patent Number 5,365,229) in view of Isaksson et al. (U.S. Patent No. 6,494,395) in further view of Baird et al. (U.S. Patent No.

6,469,636). Claim 9 is amended; support may be found in the specification on page 16, line 29 to page 17, line 5. Claims 2-7 depend on claim 9. The dependency of claims 20 and 30 is amended. Claim 11 is cancelled without prejudice.

CONCLUSION

It is submitted that all the claims now in the application are allowable. Applicants respectfully request reconsideration of the application and claims and its early allowance. The Commissioner is hereby authorized to charge any fees associated with this response which may be required, or credit any overpayment, to Deposit Account 03-0330.

Respectfully submitted,



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Date: September 18, 2004

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